FERROUS IRON - TURNBULL'S BLUE

PURPOSE: To detect ferrous (Fe^{2+}) iron in tissues.

PRINCIPLE: Tissue sections are treated with an acidic solution of potassium ferricyanide, any ferrous iron present will react to form an insoluble bright blue pigment called Turnbull's blue (ferrous ferricyanide).

CONTROL: Routine iron control, which includes an negative.

TECHNIQUE: Cut paraffin section 4µ.

EQUIPMENT: Acid clean glassware, non-metallic forceps.

REAGENTS:

0.006N Hydrochloric Acid

Hydrochloric acid	2.5 ml
Distilled water	497.5 ml

Mix well. Solution is stable for 1 year.

CAUTION: Corrosive acid.

1% Acetic Acid

Acetic acid, glacial	1.0 ml
Distilled water	100.0 ml

Mix well. Solution is stable for 1 year.

CAUTION: Avoid contact and inhalation.

Potassium Ferricyanide Staining Solution:

Potassium ferricyanide	0.4 gm
Hydrochloric acid, 0.006N	40.0 ml

Prepare fresh, just before use.

CAUTION: Avoid contact and inhalation.

Nuclear-Fast Red:
See Retic

SAFETY: Wear gloves, goggles and lab coat. Avoid contact and inhalation.

Hydrochloric acid; target organ effects on reproductive system and fetal tissue. Irritant to skin eyes and respiratory system.

Potassium ferricyanide; Low toxicity as long as it is not heated, it will release cyanide gas.

Acetic acid: Irritating to respiratory system. Target organ effects on respiratory system by inhalation. Corrosive.

PROCEDURE:

1. Deparaffinize and hydrate to distilled water.
2. Place slides in Potassium ferricyanide staining solution for 1 hour.
3. Wash slides in 1% acetic acid.
4. Counterstain slides in nuclear-fast red for 5 minutes.
5. Rinse well in distilled water.
6. Dehydrate, clear and coverslip.

RESULTS:

Ferrous iron	blue
Background	pink-red

REFERENCE:

Carson, F, Histotechnology: A Self-Instructional Text, 1st Ed., 1991, pp. 215-16 ASCP Press

Prepared:_____By: _____

Approved:_____By:_____

PROCEDURE CARD

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NUCLEAR-FAST RED

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